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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,922	08/04/2003	Moungi G. Bawendi	14952.0274 C1 D1/MIT 8096	4946
27890 7590 09/04/2007 STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EXAMINER STEELE, AMBER D	
			ART UNIT 1639	PAPER NUMBER
			MAIL DATE 09/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/632,922

Applicant(s)

BAWENDI ET AL.

Examiner

Amber D. Steele

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 12-13, 26-27, 31-33, and 37-3939 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 12, 13, 26, 27, 31-33 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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DETAILED ACTION

1. The examiner of record for the present application has changed. However, the Technology Center (TC1600) and Art Unit (AU1639) remain the same.
2. The appeal brief received on May 7, 2007 is acknowledged and entered. Upon further consideration by the current examiner of record, prosecution has been reopened. The finality of the Office action mailed on July 17, 2007 is withdrawn.

Status of the Claims

3. Claims 1-39 were originally filed on August 4, 2003.
The amendment to the claims received on April 27, 2006 amended claims 1, 26, and 37.
The amendment to the claims received on October 17, 2006 amended claims 1, 26, and 37 and canceled claims 4-11, 14-25, 28-30, and 34-36.
Claims 1-3, 12-13, 26-27, 31-33, and 37-39 are currently pending and under consideration.

Election/Restrictions

4. Applicants elected polypeptide as the species of compound/member and bead as the species of support in the reply received on October 11, 2005.

Priority

5. The present application claims status as a DIV of 09/397,432 filed September 17, 1999 (now U.S. Patent 6,602,671) which is a CIP of 09/160,458 filed September 24, 1998 (now U.S. Patent 6,617,583) and claims benefit of 60/101,046 filed September 18, 1998.

Invention as Claimed

6. A library of compounds wherein each compound in the library is bound to an individual support, each support having associated therewith more than one population of semiconductor nanocrystals, each population having a distinct characteristic spectral emission, wherein each nanocrystal comprises a Group II-VI semiconductor, a Group III-V semiconductor, a Group IV semiconductor, an alloy thereof, or a mixture thereof and variations thereof.

7. The following art-recognized terms are defined as follows:

A Group II-VI semiconductor is a binary semiconductor nanocrystal comprising both a Group II element (i.e. periodic table designation) and a Group VI element (i.e. periodic table designation). For example: MgS, MgSe, MgTe, CaS, CaSe, CaTe, SrS, SrSe, SrTe, BaS, BaSe, BaTe, ZnS, ZnSe, ZnTe, CdS, CdSe, CdTe, HgS, HgSe, and HgTe.

A Group III-V semiconductor is a binary semiconductor nanocrystal comprising both a Group III element (i.e. periodic table designation) and a Group V element (i.e. periodic table designation). For example: GaAs, InGaAs, InP, and InAs.

A Group IV semiconductor is a semiconductor nanocrystal comprising a Group IV element (i.e. periodic table designation). For example: germanium (Ge) or silicon (Si).

Withdrawn Rejections

8. The rejection of claims 1-3, 12, 13, 26, 27, 31-33, and 37-39 under 35 U.S.C. 112, second paragraph, as being indefinite regarding a broad limitation and a narrow limitation in the same claim is withdrawn in view of applicants persuasive arguments received on May 7, 2007

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regarding the art recognized definitions of Group II-VI, Group III-V, and Group IV semiconductor nanocrystals.

9. The rejection of claims 1-3, 12, 13, 26, 27, 31-33, and 37-39 under 35 U.S.C. 102(b) as being anticipated by Zarling et al. (US Patent 5,674,698) is withdrawn in view of applicants persuasive arguments received on May 7, 2007 regarding the art recognized definitions of Group II-VI, Group III-V, and Group IV semiconductor nanocrystals.

10. The rejection of claims 1-3, 12, 13, 26, 27, 31-33, and 37-39 under 35 U.S.C. 103(a) as being unpatentable over Dower et al. (US Patent 5,770,358) in view of Zarling et al. (US Patent 5,674,698) is withdrawn in view of applicants persuasive arguments received on May 7, 2007 regarding the art recognized definitions of Group II-VI, Group III-V, and Group IV semiconductor nanocrystals.

New Rejections

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-3, 12-13, 26-27, 31-33, and 37-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. One of skill in the art would not be able to determine the scope of the presently claimed invention. Claims 1, 26, and 37 recite the limitation that each nanocrystal comprises a Group II-VI semiconductor, a Group III-V semiconductor, a

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Group IV semiconductor, an alloy thereof, or a mixture thereof. A Group II-VI semiconductor nanocrystal, a Group III-V semiconductor nanocrystal, and a Group IV semiconductor nanocrystal are art-recognized to have specific compositions (e.g. a Group II-VI semiconductor nanocrystal comprises a binary composition of a Group II element and a Group VI element). Thus, the alloys and mixtures of the art-recognized definitions of a Group II-VI semiconductor nanocrystal, a Group III-V semiconductor nanocrystal, and a Group IV semiconductor nanocrystal are indefinite. For example, an alloy is considered a mixture of metals thus is a Group II-VI semiconductor itself considered an alloy (i.e. mixture of a Group II element and a Group VI element), is a Group II element combined with a Group V element considered an alloy (i.e. contrary to art-recognized terminology for Group II-VI semiconductor nanocrystals), is a Group II-VI semiconductor nanocrystal further combined with a Group II element, is a Group II-VI semiconductor nanocrystal further combined with a Group III-V semiconductor nanocrystal, etc.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1-3, 12-13, 26-27, 31-33, and 37-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Weiss et al. U.S. Patent 5,990,479 filed November 25, 1997.

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For present claims 1-3, 26, 31, 32, 37, 38, and 39, Weiss et al. teach pluralities of semiconductor nanocrystals capable of emitting electromagnetic radiation in a narrow wavelength band with linking agents and affinity molecules including antibodies (i.e. compound, member chemical, polypeptide) wherein the semiconductor nanocrystal has a core-shell structure and is a Group II-VI, Group III-V, or Group IV semiconductor and wherein the semiconductor nanocrystal can be coated with a thin layer of glass with a linking agent and affinity molecule attached (i.e. support; please refer to the entire specification particularly the abstract; Figures 2-3; column 1, lines 15-21; column 2, lines 15-53; column 4, lines 48-67; columns 5-9).

For present claims 12 and 33, Weiss et al. teach a semiconductor nanocrystal coated with a thin layer of glass with a linking agent attached (i.e. glass particle coated with a polymer, a bead, and a pore-glass bead; please refer to the entire specification particularly columns 7-8).

For present claims 13 and 27, Weiss et al. teach affinity molecules that are nucleic acids, antibodies, proteins, polysaccharides, sugars, peptides, drugs, and ligands (please refer to the entire specification particularly column 6, lines 50-67).

Therefore, the presently claimed invention is anticipated by the teachings of Weiss et al.

15. Claims 1, 3, 12, 13, 26, 27, 32, 33, 37, and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Frankel U.S. Patent 6,096,496 filed June 19, 1997.

For present claims 1, 3, 26, 32, 37, and 39, Frankel teaches combinatorial chemistry library synthesis utilizing tagged beads bound to peptides, nucleotides, and small organic molecules wherein the tag can be semiconductor nanocrystals including Group III-V particularly

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GaAs which emits light (please refer to the entire specification particularly abstract; columns 1, 5, 8, 11, 14-17, 21-22, 32).

For present claims 12 and 33, Frankel teaches beads made of cellulose, glass, pore-glass, resin, silica, and polystyrene (please refer to the entire specification particularly column 11, lines 26-43; column 12, lines 57-67; columns 13-17).

For present claims 13 and 27, Frankel teaches polypeptides (please refer to the entire specification particularly column 1, lines 19-37; column 4, lines 8-20).

Therefore, the presently claimed invention is anticipated by the teachings of Frankel.

Future Communications

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amber D. Steele whose telephone number is 571-272-5538. The examiner can normally be reached on Monday through Friday 9:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ADS

August 28, 2007

A handwritten signature in black ink, appearing to read 'Mark L. Shibuya', with a long horizontal flourish extending to the right.

MARK L. SHIBUYA
PRIMARY EXAMINER